



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/521,541

03/07/2005

Koang-Ho Jo

CU-4053 WWP

9149

26530 7590 12/29/2006  
LADAS & PARRY LLP  
224 SOUTH MICHIGAN AVENUE  
SUITE 1600  
CHICAGO, IL 60604

EXAMINER

KNIGHT, DEREK DOUGLAS

ART UNIT

PAPER NUMBER

3681

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

12/29/2006

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/521,541

Applicant(s)

JO, KOANG-HO

Examiner

Derek D. Knight

Art Unit

3681

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 1-4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 1/14/2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 5/11/2005.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. The disclosure is objected to because of the following informalities: On page 2, line 14, "22" should be changed to --21--. On page 3, line 14 "pinion levers 305, 307" should be changed to --pinion gears 306, 307--.

Appropriate correction is required.

### ***Drawings***

2. The drawings are objected to because "aut shaft" in both figures 5 and 6 should be changed to --out shaft--.

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "shaft grooves", "hollow parts", "transmission varying elements", and "unidirectional clutches" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional

Art Unit: 3681

replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

4. Claims 1 - 4 are objected to because of the following informalities:
  - a. In claim 1, line 5, "each formed with a shaft grooves" should be changed to --each formed with shaft grooves--.
  - b. In claim 2, line 3, "auxiliary shafts are" should be changed to --auxiliary shaft are--.
  - c. In claim 3, line 5 "and planetary gears," should be changed to --and planetary gears;-- to make clear what features and elements belong together.
  - d. In claim 4, line 4, "first idle gears" should be changed to -- first idle gear--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Art Unit: 3681

6. Claims 1 - 3 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

e. The "shaft grooves" and "hollow parts" that are mentioned throughout the claims and in the spec are not clearly defined. It seems that the "grooves" are referring to holes that are made in the shaft, perpendicular to the longitudinal axis of the shaft, while the "hollow parts" refer to bores made in the shaft that are coaxial with the longitudinal axis of the shaft/

f. It is unclear what the applicant in claim one lines 9 and 10 by the statement "first to fourth ring gears having a transmission rate as transmission varying elements". The specification does not further describe the "transmission rate" or the "transmission varying elements."

g. The "unidirectional clutches" mentioned in claim 1 line 15 are not mentioned or described in the specification. It is not clear where they would be located in the invention, and their functionality is also unclear.

h. In claim 2, line 3 applicant states "positioned on a same line", because line is used in the specification to mean "gear train" it is unclear if the applicant is referring to a gear train or an axis of rotation.

***Claim Rejections - 35 USC § 103***

Art Unit: 3681

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson, US 3,242,769 in view of Palmer, US 5,662,009.

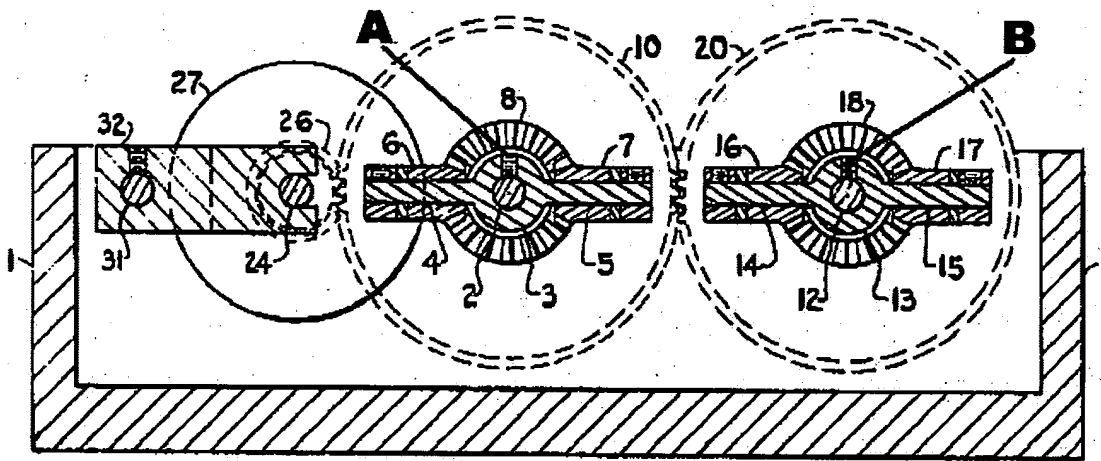
Johnson shows in figure 2 a transmission comprising a main shaft (3) and an auxiliary shaft (13), each formed with a shaft groove in the center, (shown in figure 1 below by reference letters (A, B), which have been added by the examiner), and hollow parts pointed out by reference numbers (2, 12), control gears (6, 7, 16, 17) having power distribution elements (teeth), a control casing (1) having control levers (38), first to fourth ring gears (10, 11, 20, 21) having a transmission rate (gear ratio) as transmission varying elements, first to fourth side gears (8, 9, 18, 19) attached to the ring gears, and first (26) and second (29) idle gears, wherein a casing (1) supports the main shaft (3) and auxiliary shaft (13), and the first (26) and second 29) idle gears.

The grooves (A, B) formed in the centers of the main shaft and the auxiliary shaft are positioned on a same line with the control gear shafts which are orthogonal to the main and auxiliary shafts.

On one side, the main shaft and the auxiliary shaft are engaged with the first (10) and third (20) ring gears, along with the first idle gear (26), representing a low speed gear ratio and, on the other side the main shaft and the auxiliary

Art Unit: 3681

shaft are engaged with the second (11) and fourth (21) ring gears, along with the second idle gear (29), representing a high speed gear ratio. The first (10) and third (20) ring gears are engaged with the first (8) and third (18) side gears to be engaged with the control gears (6, 7, 16, 17). The second (11) and fourth (21) ring gears are engaged with the second (9) and fourth (19) side gears to be engaged with the control gears (6, 7, 16, 17).



**Figure 1: Johnson, US 3,242,769**

Johnson does not teach unidirectional clutches being provided on both sides of the main shaft and the auxiliary shaft.

Palmer shows in figure 1 a drive mechanism with a main shaft (1) and an auxiliary shaft (9), with control gears (13, 5), control levers (2, 8), a control casing (16), first to fourth ring gears (14c, 11, 4c, 7), first to fourth side gears (14a, 12a, 4a, 6a) and unidirectional clutches (14b, 12b, 4b, 6b) provided to gear lines at both sides of the main and auxiliary shafts.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Johnson to have one-way clutches in view of

Art Unit: 3681

Palmer so that both forward and reverse rotational input can be used to produce forward and reverse rotational drive (Palmer, col. 1, lines 25-27).

***Facsimile Transmission***

Submission of your response by facsimile transmission is encouraged. Group 3600's facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on \_\_\_\_\_  
(Date)



Art Unit: 3681

Typed or printed name of person signing this certificate:

---

---

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derek D. Knight whose telephone number is (571) 272-7951. The examiner can normally be reached on Mon - Thurs & every other Friday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on (571) 272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3681

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DDK

**DIRK WRIGHT**  
**PRIMARY EXAMINER**  
**ART UNIT 352 3681**

